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FIG 1

Input: (implicit: topology, routing, budgets)

 $B_{hot} := B$ while  $B_{hot} \neq \emptyset$  doselect  $b^* \in B_{hot}$  with the largest blocking probability $c_U^{inc} := 1$ if  $(\forall l \in \mathcal{E}: c_U^{free}(l) \geq c_U^{inc}(l, b^*))$  then $c_U[b^*] := c_U[b^*] + c_U^{inc}$ 

else

 $B_{hot} := B_{hot} \setminus b^*$ 

end if

end while

Output: assignment of portions of transmission capacity

 $c_U[b], b \in B$ 

FIG 2

Input: Link  $l$  (implicit: topology, routing, budgets)if  $|\{b: b \in B_{hot} \wedge u(l, b) > 0\}| > 0$  then select $b^* \in B_{hot} : u(l, b^*) > 0$  with the largest blocking probability $c_U^* := \lfloor q(l) \cdot a(b^*) \rfloor$  $p_b^* := p_b(a(b^*), c_U[b^*] + c_U^*)$ for all  $b \in \{b: b \in B_{hot} \wedge u(l, b) > 0\}$  do $c_U^b := \lfloor q(l) \cdot a(b) \rfloor$  $p_b^b := p_b(a(b), c_U[b] + c_U^b)$ while  $p_b^* < p_b^b$  do $c_U^* := \lfloor q^{dec} \cdot c_U^* \rfloor$  $p_b^* := p_b(a(b^*), c_U[b^*] + c_U^*)$ 

end while

end for

else

 $c_U^* := 0$ 

end if

Output: link capacity increment  $c_U^*$ 

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## FIG 3

Input: (implicit: topology, routing, budgets)

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    for all  $l \in \mathcal{E}$  do
         $c_U^{inc}[l] := \text{CapInc}(l)$ 
    end for
     $B_{hot} := B$ 
    while  $B_{hot} \neq \emptyset$  do
        select  $b^* \in B_{hot}$  with the largest blocking probability

         $c_U^{inc} := \max(1, \min_{l \in \mathcal{E}: u(l,b) > 0} c_U^{inc}[l])$ 
        if  $(\forall l \in \mathcal{E}: c_U^{free}(l) \geq c_U^{inc} \cdot u(l, b^*))$  then
             $c_U[b^*] := c_U[b^*] + c_U^{inc}$ 
        else
             $B_{hot} := B_{hot} \setminus b^*$ 
        end if
        for all  $l \in \mathcal{E}$  do
            if  $u(l, b^*) > 0$  then
                 $c_U^{inc}[l] := \text{CapInc}(l)$ 
            end if
        end for
    end while

```

Output: assignment of portions of transmission capacity

 $c_U[b], b \in B$ 

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